

REMARKS

In the non-final Office Action, the Examiner rejected claims 1-38 under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent Publication No. 2003/0223431 to Chavez et al. (“Chavez”) in view of U.S. Patent No. 6,515,966 to Bardalai et al. (“Bardalai”).

In this Amendment, Applicant amends claims 1-25 and 27-38 to improve form. No new matter has been added. Claims 1-38 remain pending.

Claim 1

Amended claim 1 recites:

A method of authenticating a resource reservation message sent between a source node and a destination node in a network, comprising:
 constructing an outgoing resource reservation message, the message comprising a plurality of objects;
 selecting multiple objects of the message;
 constructing identification values identifying the selected multiple objects;
 calculating a message integrity value using the selected multiple objects of the message;
 inserting the calculated integrity value and the constructed identification values in the message;
 sending the message including the inserted integrity value and the identification values, from the source node, across a network to the destination node; and
 authenticating the multiple objects of the message at the destination node using the message integrity value and the constructed identification values.

Chavez and Bardalai, alone or in reasonable combination, do not disclose or suggest at least “sending the message including the inserted integrity value and the identification values, from the source node . . . ; and authenticating the multiple objects of the message

at the destination node using the message integrity values.” In the Office Action at pages 2-3, the Examiner cites to the following paragraph with respect to Chavez:

Although the potential to use preemption levels to disrupt or deny service in an RSVP network is great, RSVP defines an INTEGRITY object that accompanies RSVP path and resv messages that is used to authenticate RSVP messages. This authentication mechanism may be used by the RSVP-aware elements in the network (e.g., the gatekeeper or gateway) to determine if a request (particularly on M-class object) is genuine.

(Para. 53, underline added here.) This is the only part of Chavez that makes any reference to an “integrity” object. Chavez merely discloses an authentication mechanism used by RSVP-aware elements, such as a gateway. Chavez does not disclose or suggest authenticating the multiple objects of the message at the destination node, much less authenticating at the destination node where the message (including the inserted integrity value and identification values) is sent from the source node, as claimed.

Bardalai does not cure the deficiencies of Chavez. At page 3 of the Office Action, the Examiner references FIG. 4a of Bardalai. The written description corresponding to FIG. 4a of Bardalai discloses:

Portion 181 of path message 180 comprises a standard RSVP protocol path message including a Common Header object 230, an Integrity object 232, a Session object 234, an RSVP-Hop object 236, a Time-Value object 238, a Sender Descriptor object 240, and an AdSpec object 242.

(Col. 8, lines 30-35, underline added here.) Another portion of Bardalai, describing FIG. 4b, discloses:

Portion 183 of reservation message 182 comprises a standard RSVP protocol reservation message including a Common Header object 250, an Integrity object 252, a Session object 254, an RSVP-

Hop object 256, a Time-Value object 258, a Style object 260, and a
Flow Descriptor List object 262.

(Col. 8, lines 46-51, underline added here.) The above sentences are the only two sentences in Bardalai disclosing an “integrity” object. Bardalai does not disclose or even remotely suggest authenticating the multiple objects of the message at the destination node, much less authenticating at the destination node where the message (including the inserted integrity value and identification values) is sent from the source node, as claimed.

In fact, the portions of Bardalai and Chavez disclosed above and cited by the Examiner appear to be discussing the “standard” RSVP protocol message. This “standard” RSVP protocol message is discussed in the specification of the current application at page 1, paragraph 0004, and page 14, paragraph 0034:

[0004] Existing resource reservation protocols, such as RSVP, include algorithms for authenticating the reservation messages. In RSVP, authentication is performed over each hop in the path between the source node and the destination node. Thus, the source node, destination node, and every node in the packet-switched network in between them, must authenticate every message sent between the source node and the destination node (i.e., perform point-to-point authentication). This requires that security relationships be established, and updated, between each and every node in the path between the source and destination nodes, thereby increasing the processing burden on each node in the network and slowing the reservation of resources that ensure adequate quality of service for transmissions between the source and destination nodes.

[0034] Consistent with the principles of the invention, resource reservation messages transmitted between source and destination nodes in a network may be authenticated in an end-to-end fashion, instead of conventional point-to-point resource reservation authentication. Message integrity values may be calculated at the source and destination nodes, and not the intermediate hops of the

intervening network, and authenticated at the source and destination nodes, instead of at every hop along the path between the source and destination node. End-to-end resource reservation authentication, consistent with the principles of the invention, thus serves to reduce the processing burden on nodes (e.g., routers) in the network and speeds the resource reservation process.

Applicant cites the above portions of the patent application, for the convenience of the Examiner, for its discussion of the state of the “conventional point-to-point resource reservation authentication” and the “existing resource reservation protocols.” Applicant notes that claim 1 may be broader than any embodiments described in these paragraphs.

Because neither Chavez nor Bardalai, either alone or in reasonable combination, discloses or suggests all the features of claim 1, they cannot render claim 1 obvious. Therefore, Applicant respectfully requests that the Examiner reconsider and withdraw the rejection of claim 1 under § 103(a).

Dependent Claims 2-15

Claims 2-15 depend on claim 1 and include all the features of claim 1. Therefore, neither Chavez nor Bardalai, alone or in reasonable combination, discloses or suggests all the features of claims 2-15 for at least the same reasons discussed above with respect to claim 1. Applicant respectfully requests that the Examiner reconsider and withdraw the rejection of claims 2-15 for at least the reasons given above with respect to claim 1.

Moreover, claims 2-15 recite additional features not disclosed or suggested by either Chavez or Bardalai. For example, claim 5 recites a combination of features including, among other things: “where calculating the message integrity value comprises calculating the message integrity value using the network address.” The Examiner

alleges that FIG. 4a, reference number 244, in Bardalai discloses this feature of claim 5. Neither FIG. 4a nor the corresponding portion of the written description of Bardalai, however, disclose or suggest what is used for calculating the “Integrity object 232” in FIG. 4a. Therefore, Bardalai does not disclose or remotely suggest “where calculating the message integrity value comprises calculating the message integrity value using the network address,” as recited. Chavez does not cure the deficiencies of Bardalai in this respect, and the Examiner does not cite to any portion of Chavez with respect to claim 5.

In addition, claim 6 recites a combination of features including, among other things: “where the identification values comprise an ordered list, and where calculating the message integrity value comprises using the selected multiple objects in an order specified by the ordered list.” Again, the Examiner alleges that FIG. 4a of Bardalai discloses this feature. As described above, however, neither FIG. 4a nor the corresponding portion of the written description, disclose or suggest what is used for calculating the “Integrity object 232” or how the Integrity object 232 is calculated. Thus, Bardalai cannot disclose or remotely suggest “where calculating the message integrity value comprises using the selected multiple objects in an order specified by the ordered list,” as claimed. Chavez not cure the deficiencies of Bardalai in this respect, and the Examiner does not cite to any portion of Chavez with respect to claim 6.

At least for these additional reasons, neither Bardalai nor Chavez, alone or in reasonable combination, discloses or suggests the combination of elements recited in claim 4 or 5. Applicant respectfully requests that the Examiner reconsider and withdraw the rejection of claims 4 and 5 under § 103(a) for these additional reasons.

Independent Claims 16, 17, 26, 33, and 38

Although of different scope than claim 1 and each other, independent claims 16, 17, 26, 33, and 38 include features similar to those discussed above with respect to claim 1. For example, claim 16 recites a combination of features including, among other things, “a source node comprising: a processor to insert the calculated message integrity value and the constructed list in the message” and “a destination node comprising a processor to authenticate the message using the message integrity value and the constructed list.” As another example, claim 17 recites a combination of features including, among other things, “a network interface to send the message across the network to the destination node for authentication of the network device at the destination node using the inserted message integrity value and the constructed list.” In addition, claim 26 recites a combination of features including, among other things, “determining, at the source node, an authentication value using at least a portion of the message; . . . and authenticating the message at the destination node using the authentication value.” In addition, claim 33 recites a combination of features including, among other things, “a network interface to send the message across the network to the destination node for authenticating the network device at the destination node using the authentication value.” As a final example, claim 38 recites a combination of features including, among other things, “means for transmitting the message including the inserted authentication value from the source node to the destination node across the network; and means for authenticating the message at the destination node using the authentication value.”

For at least the same reasons discussed above with respect to claim 1, therefore, neither Chavez nor Bardalai, alone or in reasonable combination, discloses or suggests all the features of claims 16, 17, 26, 33, or 38. Applicant respectfully requests that the Examiner reconsider and withdraw the rejection of claims 16, 17, 26, 33, or 38 for at least the reasons given above with respect to claim 1.

Dependent Claims 18-25, 27-32, and 34-37

Dependent claims 18-25, 27-32, and 34-37 depend on one of independent claims 17, 26, or 33, and include all the features of their respective base claims. Therefore, claims 18-25, 27-32, and 34-37 are allowable over the combination of Bardalai and Chaves for at least the reasons stated above with respect to claims 17, 26, or 33. Applicant respectfully requests that the Examiner reconsider and withdraw the rejection of claims 18-25, 27-32, and 34-37 under § 103(a).

Moreover, claims 18-25, 27-32, and 34-37 recite additional features not disclosed or suggested by either Chavez or Bardalai. For example, claim 18 recites a combination of features including, among other things, “where the processor is further configured to calculate the message integrity value using the selected multiple objects in an order specified by the ordered list.” As discussed above with respect to claim 6, neither Chavez nor Bardalai discloses or remotely suggests this feature. Therefore, Applicant respectfully requests that the Examiner reconsider and withdraw the rejection of claim 18 under § 103(a) for this additional reason.

Conclusion

As Applicant's remarks with respect to the Examiner's rejections overcome the rejections, Applicant's silence as to certain assertions by the Examiner in the Office Action or certain requirements that may be applicable to such rejections (e.g., whether a reference constitutes prior art, reasons for modifying a reference and/or combining references, assertions as to dependent claims, etc.) is not a concession by Applicant that such assertions are accurate or that such requirements have been met, and Applicant reserves the right to dispute these assertions/requirements in the future.

In view of the foregoing amendments and remarks, Applicants respectfully request the Examiner's reconsideration of this application, and the timely allowance of the pending claims.

While the present application is now believed to be in condition for allowance, should the Examiner find some issue to remain unresolved, or should any new issues arise which could be eliminated through discussions with Applicants' representative, then the Examiner is invited to contact the undersigned by telephone in order that the further prosecution of this application can thereby be expedited.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-1070 and please credit any excess fees to such deposit account.

Respectfully submitted,

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